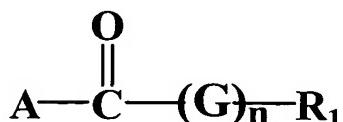


What is claimed is:

1. A liquid crystal compound with high helical
2 twisting power having a formula (I), of:



4 or a formula (II), of:



6 wherein

7 A comprises naturally occurring organic multi-ring
8 alcohohlates selected from alcohohlates of
9 terpenol, borneol, cinchonidine, and quinine;

10 R_1 is hydrogen, alkyl, thioalkyl, or alkyloxy group,
11 wherein alkyl, thioalkyl, and alkyloxy group
12 can be straight or branched and have 1 to 10
13 carbon atoms optionally substituted with at
14 least one fluorine atom;

15 n is 1, 2, or 3; and

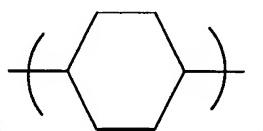
16 G is the same or different and is unsubstituted or
17 substituted cycloalkyl, heterocyclic, aryl,
18 heteroaryl, arylalkyl, or heteroarylalkyl
19 group, and is optionally substituted with at
20 least one fluorine atom, alkyl, or alkyloxy
21 group.

1 2. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R₁ is -OC₆H₁₃, n is 1, A is



3 alcolholate of terpenol, and G is

1 3. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R₁ is -C₃H₇, n is 1,A is



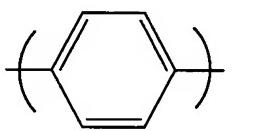
3 alcolholate of terpenol, and G is

1 4. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R₁ is -OC₁₀H₂₁, n is 2, A is



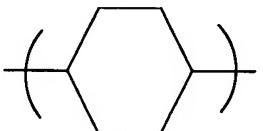
3 alcolholate of terpenol, and G is

1 5. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R₁ is -OC₆H₁₃, n is 1, A is



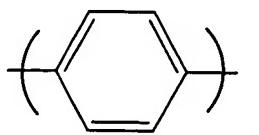
3 alcolholate of borneol, and G is

1 6. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R₁ is -C₃H₇, n is 1, A is



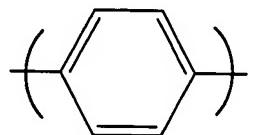
3 alcolholate of borneol, and G is

1 7. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R₁ is -OC₁₀H₂₁, n is 2, A is



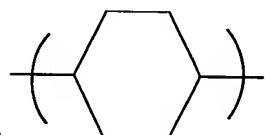
3 alcolholate of borneol, and G is

1 8. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R₁ is -OC₆H₁₃, n is 1, A is



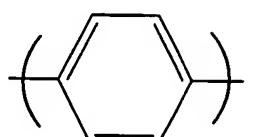
3 alcolholate of cinchonidine, and G is

1 9. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R₁ is -C₃H₇, n is 1, A is



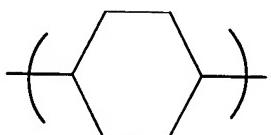
3 alcolholate of cinchonidine, and G is

1 10. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R₁ is -OC₁₀H₂₁, n is 2, A is



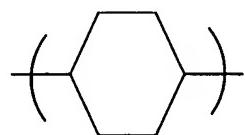
3 alcolholate of cinchonidine, and G is

1 11. The liquid crystal compound having formula (II)
2 as claimed in claim 1, wherein n is 1, A is alcolholate



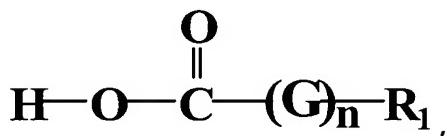
3 of terpenol, and G is

1 12. The liquid crystal compound having formula (II)
2 as claimed in claim 1, wherein n is 1, A is alcolholate

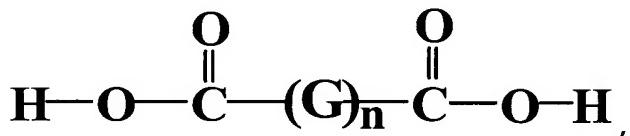


3 of borneol, and G is .

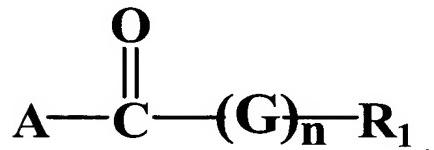
1 13. A method for preparing liquid crystal compounds
2 with high helical twisting power, comprising:
3 reacting an organic acid represented by a formula
4 (III) of:



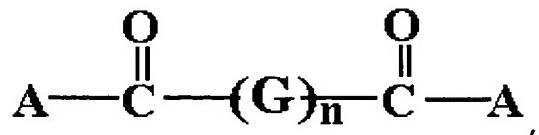
6 or a formula (IV) of:



8 and a natural alcohol with optical activity
9 undergoing esterification to obtain a liquid
10 crystal compound represented by a formula (I)
11 of:



13 or a formula (II) of:



15 wherein

16 R₁ is hydrogen, alkyl, thioalkyl, or alkyloxy group,
17 wherein alkyl, thioalkyl, and alkyloxy group
18 can be straight or branched and have 1 to 10
19 carbon atoms optionally substituted with at
20 least one fluorine atom;

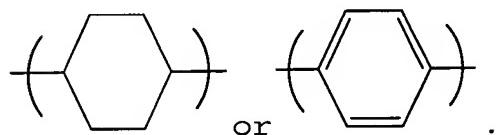
21 n is 1, 2, or 3; and

22 G is the same or different and is unsubstituted or
23 substituted cycloalkyl, heterocyclic, aryl,
24 heteroaryl, arylalkyl, or heteroarylalkyl
25 group, and is optionally substituted with at
26 least one fluorine atom, alkyl, or alkyloxy
27 group.

1 14. The method as claimed in claim 13, wherein the
2 natural alcohol with optical activity is terpenol,
3 borneol, cinchonidine, quinine, or derivatives thereof.

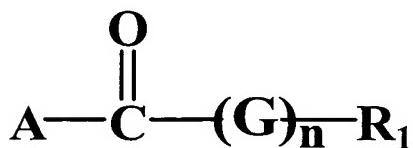
1 15. The method as claimed in claim 13, wherein the
2 organic acid is benzoic acid, cyclohexane carboxylic
3 acid, biphenyl carboxylic acid, para-cyclohexane
4 dicarboxylic acid, terephthalic acid, 4-n-hexyloxy-
5 benzoic acid, 4-n-propyl-cyclohexanecarboxylic acid, 4'-
6 decyloxy-biphenyl-4-carboxylic acid, or cyclohexane-1,4-
7 dicarboxylic acid, and is optionally substituted.

1 16. The method as claimed in claim 13, wherein G is



3 17. A liquid crystal composition, comprising:

4 at least one liquid crystal compound represented by
5 a formula (I) of:



7 or a formula (II) of:



9 at a ratio from 3wt% to 30wt%, based on the weight
10 of the liquid crystal composition; and

11 a liquid crystal at a ratio from 3wt% to 97wt%,
12 based on the weight of the liquid crystal
13 composition.

1 18. The liquid crystal composition as claimed in
2 claim 17, wherein the at least one liquid crystal
3 compound represented by formula (I) or formula (II) is at
4 a ratio from 5wt% to 20wt%.

1 19. The liquid crystal composition as claimed in
2 claim 17, wherein the liquid crystal is a liquid crystal
3 used in TN-LCD, STN-LCD, SSTN-LCD or TFT-LCD.

1 20. The liquid crystal composition as claimed in
2 claim 17, wherein the liquid crystal composition is used
3 in preparation of reflective polarizer or color filter.